

6th Grade Unit	Major Outcomes	Catholic Identity	Assessments/ activities	Resources
Matter & Molecules	<p>P.CM.06.11 Describe and illustrate changes in state, in terms of the arrangement and relative motion of the atoms or molecules.</p> <p>P.CM.06.12 Explain how mass is conserved as a substance changes from state to state in a closed system.</p> <p>P.PM.07.21 Identify the smallest component that makes up an element.</p> <p>P.PM.07.23 Illustrate the structure of molecules using models or drawings (water, carbon dioxide, table salt). *</p> <p>P.PM.07.24 Describe examples of physical and chemical properties of elements and compounds (boiling point, density, color, conductivity, reactivity).</p> <p>P.CM.07.21 Identify evidence of chemical change through color, gas formation, solid formation, and temperature change.</p> <p>P.CM.07.22 Compare and contrast the chemical properties of a new substance with the original after a chemical change.</p> <p>P.CM.07.23 Describe the physical properties and chemical properties of the products and reactants in a chemical change.</p>	<ul style="list-style-type: none"> • God’s master plan • Believe even what we cannot see • Life occurs how we know it because of plan (closer to sun, balance of molecules) 	Centers lab identifying physical and chemical changes as well as changes in states of matter	Various lab tools: beakers, hot plate, tongs, Bunsen Burner, etc
Ecology	<p>L.OL.06.51 Classify producers, consumers, and decomposers based on their source of food (the source of energy and building materials). *</p> <p>L.OL.06.52 Distinguish between the ways in which consumers and decomposers obtain energy.</p> <p>L.EC.06.11 Identify and describe examples of populations, communities, and ecosystems including the Great Lakes region.</p> <p>L.EC.06.21 Describe common patterns of relationships between and among populations (competition, parasitism, symbiosis, predator/prey).</p> <p>L.EC.06.22 Explain how two populations of organisms can be mutually beneficial and how that can lead to interdependency.</p> <p>L.EC.06.23 Predict how changes in one population might affect other populations based upon their relationships in the food web.</p> <p>L.EC.06.31 Identify the living (biotic) and nonliving (abiotic) components of an ecosystem.</p> <p>L.EC.06.32 Identify the factors in an ecosystem that influence changes in population size.</p>	<ul style="list-style-type: none"> • Responsible for earth • Thou shall not steal • Dominion over the animals • Genesis 	Biome project identifying <ul style="list-style-type: none"> • Factors (climate and precipitation) • Food web • Competition • Niche • Community/population • Adaptations 	Student provided materials

Circulatory System	Describe how the circulatory system works. Describe the functions of the circulatory system. Identify characteristics of various blood cells and plasma. Explain different types of heart disease.	<ul style="list-style-type: none"> • Made in the image of God 	Heart dissection	Hearts Scissors Dissecting pins, trays Scalpels?
Plate Tectonics	E.SE.06.51 Explain plate tectonic movement and how the lithospheric plates move centimeters each year. E.SE.06.52 Demonstrate how major geological events (earthquakes, volcanic eruptions, mountain building) result from these plate motions. E.SE.06.53 Describe layers of the Earth as a lithosphere (crust and upper mantle), convecting mantle, and dense metallic core.	<ul style="list-style-type: none"> • God's master plan • St. Thomas Aquinas 5 proofs (design, etc) 	Google Earth presentation (Identify volcanoes and earthquakes in 1 of 3 major zones and explain causes of these activities based on location)	Computers Internet connection Google Earth software downloaded onto computers
Classification	P.EN.07.43 Explain how light energy is transferred to chemical energy through the process of photosynthesis. L.OL.07.61 Recognize the need for light to provide energy for the production of carbohydrates, proteins and fats. L.OL.07.63 Describe evidence that plants make, use and store food. Describe how organisms are classified into major kingdoms based on specific characteristics used to place organisms in each kingdom. Recognize cellular parts and functions of each major kingdom group.	<ul style="list-style-type: none"> • God's master plan • Taxonomy of the Church 	Classify new, unknown species based on characteristics	Descriptions of new species.

7th Grade Unit	Major Outcomes	Catholic Identity	Assessments/ activities	Resources
Sound & Light (Wave Behavior) Electromagnetic Spectrum	<p>P.EN.07.31 Identify examples of waves, including sound waves, seismic waves, and waves on water.</p> <p>P.EN.07.32 Describe how waves are produced by vibrations in matter.</p> <p>P.EN.07.33 Demonstrate how waves transfer energy when they interact with matter (for example: tuning fork in water, waves hitting a beach, earthquake knocking over buildings). Identify the different regions on the electromagnetic spectrum and compare them in terms of wavelength, frequency, and energy.</p> <p>Explain why we see a distant event before we hear it (e.g., lightning before thunder, exploding fireworks before the boom).</p>	<ul style="list-style-type: none"> • God’s Master Plan 	<p>Sound – musical instrument evaluation</p> <p>Light – light box investigative lab</p>	<p>Various musical instruments</p> <p>Light boxes and kits</p>
Cell Processes	<p>L.OL.07.21 Recognize that all organisms are composed of cells (single cell organisms, multicellular organisms).</p> <p>L.OL.07.22 Explain how cells make up different body tissues, organs, and organ systems.</p> <p>L.OL.07.23 Describe how cells in all multicellular organisms are specialized to take in nutrients, which they use to provide energy for the work that cells do and to make the materials that a cell or organism needs. (<i>esp. photosynthesis</i>)</p> <p>L.OL.07.24 Recognize that cells function in a similar way in all organisms.</p> <p>L.OL.07.31 Describe growth and development in terms of increase of cell number and/or cell size.</p> <p>L.OL.07.32 Examine how through cell division, cells can become specialized for specific functions.</p> <p>L.OL.07.62 Explain that carbon dioxide and water are used to produce carbohydrates, proteins, and fats.</p>	<ul style="list-style-type: none"> • God’s Master Plan 	<p>Onion Root tip lab to identify meiosis and mitosis, osmosis, diffusion</p>	<p>Microscopes Slides Cover slips Methylene blue Saline solution?</p>
Nervous and Endocrine Systems	<p>Describe how the central nervous system works with the body to maintain function.</p> <p>Understand the purpose of a neuron and its role in a synapse. Identify the basic structure of the brain and each primary function.</p> <p>Explain the role the endocrine system plays in regulating the body.</p> <p>Identify the primary glands of the endocrine system and their function.</p> <p>Explain the effect drugs and alcohol can have on the endocrine system.</p>	<ul style="list-style-type: none"> • Made in God’s Image • Design of human body part of master plan • God created us perfectly (how systems work together) 	<p>Stimuli lab</p>	

<p>Rocks, Minerals and Fossils</p>	<p>E.SE.06.11 Explain how physical and chemical weathering lead to erosion and the formation of soils and sediments.</p> <p>E.SE.06.12 Explain how waves, wind, water, and glacier movement, shape and reshape the land surface of the Earth by eroding rock in some areas and depositing sediments in other areas.</p> <p>E.SE.06.13 Describe how soil is a mixture made up of weather eroded rock and decomposed organic material.</p> <p>E.SE.06.14 Compare different soil samples based on particle size and texture.</p> <p>E.SE.06.41 Compare and contrast the formation of rock types (igneous, metamorphic, and sedimentary) and demonstrate the similarities and differences using the rock cycle model.</p> <p>E.ST.06.31 Explain how rocks and fossils are used to understand the age and geological history of the Earth (timelines and relative dating, rock layers).</p> <p>E.ST.06.41 Explain how Earth processes (erosion, mountain building, and glacier movement) are used for the measurement of geologic time through observing rock layers.</p> <p>E.ST.06.42 Describe how fossils provide important evidence of how life and environmental conditions have changed.</p>	<ul style="list-style-type: none"> • God’s Master Plan • Historic truths (1st sin did occur, all things created by God, made in God’s image, God created evolution, all descended from original parents) 	<p>Identify rocks using tests of color, streak, acidity, hardness, <i>Write children’s story about one of the rocks and its journey through rock cycle</i></p>	<p>Rocks, nails, vinegar, pennies</p>
<p>Weather</p>	<p>P.EN.06.41 Explain how different forms of energy can be transferred from one place to another by radiation, conduction, or convection.</p> <p>P.EN.07.61 Identify that nuclear reactions take place in the sun, producing heat and light.</p> <p>P.EN.07.62 Explain how only a tiny fraction of light energy from the sun is transformed to heat energy on Earth.</p> <p>E.ES.07.11 Demonstrate, using a model or drawing, the relationship between the warming by the sun of the Earth and the water cycle as it applies to the atmosphere (evaporation, water vapor, warm air rising, cooling, condensation, clouds).</p> <p>E.ES.07.12 Describe the relationship between the warming of the atmosphere of the Earth by the sun and convection within the atmosphere and oceans.</p> <p>E.ES.07.13 Describe how the warming of the Earth by the sun produces winds and ocean currents.</p> <p>E.ES.07.11 Demonstrate, using a model or drawing, the relationship between the warming by the sun of the Earth and the water cycle as it applies to the atmosphere (evaporation, water vapor, warm air rising, cooling, condensation, clouds).</p> <p>E.ES.07.12 Describe the relationship between the warming of the atmosphere of the Earth by the sun and convection within the atmosphere and oceans.</p> <p>E.ES.07.13 Describe how the warming of the Earth by the sun</p>	<ul style="list-style-type: none"> • Psalm 148:8 weather does God’s bidding • Examples of God’s actions through weather 	<p>Create a weather report based on 4 factors and design a newscast with maps.</p>	<p>Computer</p>

produces winds and ocean currents.

E.ES.07.71 Compare and contrast the difference and relationship between climate and weather.

E.ES.07.72 Describe how different weather occurs due to the constant motion of the atmosphere from the energy of the sun reaching the surface of the Earth.

E.ES.07.73 Explain how the temperature of the oceans affects the different climates on Earth because water in the oceans holds a large amount of heat.

E.ES.07.74 Describe weather conditions associated with frontal boundaries (cold, warm, stationary, and occluded) and the movement of major air masses and the jet stream across North America using a weather map.

E.ES.07.81 Explain the water cycle and describe how evaporation, transpiration, condensation, cloud formation, precipitation, infiltration, surface runoff, ground water, and absorption occur within the cycle.

E.ES.07.82 Analyze the flow of water between the components of a watershed, including surface features (lakes, streams, rivers, wetlands) and groundwater.

E.FE.07.11 Describe the atmosphere as a mixture of gases.

E.FE.07.12 Compare and contrast the composition of the atmosphere at different elevations.

8 th Grade Unit	Major Outcomes	Catholic Identity	Assessments/activities	Resources
Force and Energy	<p>P.EN.06.11 Identify kinetic or potential energy in everyday situations (for example: stretched rubber band, objects in motion, ball on a hill, food energy).</p> <p>P.EN.06.12 Demonstrate the transformation between potential and kinetic energy in simple mechanical systems (for example: roller coasters, pendulums).</p> <p>P.EN.06.42 Illustrate how energy can be transferred while no energy is lost or gained in the transfer. Describe how heat is produced through electricity, rubbing, and burning. Describe the energy transformations when electrical energy is produced and transferred to homes and businesses. Identify common household devices that transform electrical energy to other forms of energy, and describe the type of energy transformation.</p> <p>Explain energy transfer in a circuit. (5th grade GLCEs included to show Newton's 3 Laws of Motion)</p> <p>P.FM.05.31 Describe what happens when two forces act on an object in the same or opposing directions.</p> <p>P.FM.05.32 Describe how constant motion is the result of balanced (zero net) forces.</p> <p>P.FM.05.33 Describe how changes in the motion of objects are caused by a non-zero net (unbalanced) force.</p> <p>P.FM.05.34 Relate the size of change in motion to the strength of unbalanced forces and the mass of the object.</p> <p>P.FM.05.41 Explain the motion of an object relative to its point of reference.</p> <p>P.FM.05.42 Describe the motion of an object in terms of distance, time and direction, as the object moves, and in relationship to other objects.</p> <p>P.FM.05.43 Illustrate how motion can be measured and represented on a graph.</p>	<ul style="list-style-type: none"> • Only God can create energy • Psalm 148:5 “He spoke and they were made. He commanded and they were created.” 	Rube Goldberg Machine	Students provide all resources
Genetics and Heredity	<p>L.HE.07.21 Compare how characteristics of living things are passed on through generations, both asexually and sexually.</p> <p>L.HE.07.22 Compare and contrast the advantages and disadvantages of sexual vs. asexual reproduction. Explain how genetic material is passed from parent to young in genetic materials (DNA.) Explain how new traits may arise in individuals through changes in genetic material.</p>	<ul style="list-style-type: none"> • Made in God's Image • Master Plan 	Wisconsin Fast Plant Phenotype Variation lab (ongoing project culminating in final lab report which ties together reproduction, genetics, and plant life cycles)	Wisconsin fast plants Dirt planters

Reproductive System	<p>Explain the purpose of sexual reproduction. Identify male and female sex organs. Describe the fertilization process (life at moment of conception through birth)</p>	<ul style="list-style-type: none"> • Master Plan • Made in God's Image • Vessel for Holy Spirit • Called to Holy Orders, Single life or Married life 	<p>Family project</p>	
Human Impact on the Environment	<p>L.EC.06.41 Describe how human beings are part of the ecosystem of the Earth and that human activity can purposefully, or accidentally, alter the balance in ecosystems. L.EC.06.42 Predict possible consequences of overpopulation of organisms, including humans, (for example: species extinction, resource depletion, climate change, pollution). E.ES.07.41 Explain how human activities (surface mining, deforestation, overpopulation, construction and urban development, farming, dams, landfills, and restoring natural areas) change the surface of the Earth and affect the survival of organisms. E.ES.07.42 Describe the origins of pollution in the atmosphere, geosphere, and hydrosphere, (car exhaust, industrial emissions, acid rain, and natural sources), and how pollution impacts habitats, climatic change, threatens or endangers species.</p>	<ul style="list-style-type: none"> • Responsible for Earth (Genesis) 	<p>Test Grand River for various element levels (phosphate, etc) and write a report</p> <p>Global Warming Bloom Ball</p>	<p>Chemical tester kits</p>
Chemistry	<p>P.PM.07.11 Classify substances by their chemical properties (flammability, pH, and reactivity). P.PM.07.22 Describe how the elements within the Periodic Table are organized by similar properties into families (highly reactive metals, less reactive metals, highly reactive nonmetals, and some almost completely non-reactive gases). Describe how families are arranged by valence electrons and how that information is used in bonding. Identify chemical reactions through their reactants and products. Balance simple chemical equations.</p>	<ul style="list-style-type: none"> • God's Master Plan 	<p>Blind chemical identification lab (using chemical properties)</p>	<p>Various chemicals Bunsen burners Eyelet</p>

